tional Museum.

Feather Cloaks That Are Worth a King's Ransom.

WELL WORTHY OF STUDY



AWAH ITSELF IS represented in the National Museum by a comparatively small collection. But had it not been for an unfortunate accident the ethnological material from the Sandwich Islands would be richer than that from any other region of the earth at all comparable in extent. A ship load

of Hawaiian objects of scientific interest started from the isolated group in 1841, after Lieut. Wilkes had spent several years at the islands in the Peabody, but the collection is now covered by the waters of the Atlantic instead of the high roof of the National Museum.

bers of the great Polynesian family, and the products of their industry, and the ethnological department possesses an abundance of material from these Pacific islands farther to the south. All that has come from the islands, which are now creating tographs of the ex-Queen Liliuokalani, her deceased Caucasian husband, King Kalakaua and other fat and dark-skinned royal personages and a living specimen of the taro plant, whose root furnishes the principal article of diet of the natives.



This specimen is to be seen among the green plants which surround the fountain pool under the high dome of the rotunda. Looking westward from the fountain into gical court the visitor will nothe further extremity of the court, the bust of a dark gentleman attired in civilized garb. This was molded from a photo-graph of King "Calico," and, while giving a very good idea of the general appearance of the man, falls to reproduce the peculiar expression apparently due to the characteristic chubbiness of the Sandwich Is-

Under this bust are exhibited the precious war cloaks, which for costliness of fabri-cation are almost above comparison. One, brilliant with red and yellow feathers, has an expanse of five or six feet. It is labeled with a framed statement in a good hand, concluding with the subscription, of the Sandwich Islands." "This cloak," says the inscription, "formerly belonged to Keluaskalani, one of the highest chiefs of the Sandwich Islan Is. After the abolition of idolatry, in the year 1819, that and attempted to re-establish the ancient feligions. A sanguinary battle was fought and that chief was slain, and the cloak which he then had on fell into the hands of the conquerors and thus became the property of King Kamehameha III, by it was presented to Capt. J. H. Au-United States navy." foundation of the mantle is a net

work of native hemp. To this are attached, by fine threads, the feathers of birds found only at the Hawaiian Islands. The feathers, overlapping each other, lie flat, formers, overlapping each other, lie flat, form-ing a smooth surface, decorated with altersurface is without lining and shows the network and the quill ends of the feathers. The yellow feathers are obtained from the uho, and are of great value, as the difficult to capture, and it has but a very small tuft of these feathers upon each shoulder. The oo is caught alive by means of bird lime, the yellow feather plucked and

"Kaukeaouli has the mams, or feather war cloak of his father, Ta-meha-meha. It was not completed until his reign, having occupled eight preceding ones in its fabrication of nankeen, valued at \$1.50, was the price of five of the yellow By this estimate the varie of the monds in several of the European regalia. and including the price of the feathers not less than a million dollars' labor was expended upon it, at the present rate of com-

The Crown Treasure.

Taxes were paid to the native sovereigns in these yellow feathers. Many years were were, until recent years, the royal robes of state, and constituted the principal treasure

A few days since an inventor was at the museum examining the rolls of sinnet, or native cocoa fiber braid, to obtain suggestions for the perfecting of a levice to be patented. These rolls as put up by the natives exhibit a strikingly ornamental armatives exhibit a strikingly ornamental armative construction. rangement. The braid was of great importance in the Hawaiian industries, for such an article as a nail was unknown, ord even a peg was never used. Everything was tied together—shark's teeth to spears was tied together-shark's teeth to spears and "sword" edges, the thatch, rafters and

This may be well seen on the native ves-el previously mentioned as having been presented by a former queen. This beat may be readily distinguished from the other vessels suspended from the ceiling in the navigation hall by its sail of woven about twenty-five feet long, in which the work of a keel is performed by outrigging— a small log tied to the ends of two sticks protruding several feet from the side of the canoe. Often the native increased the capacity of his vessel by laying supports across the transverse pieces, and in the long voyages for which his race was so re-

markable slept upon the platform thus A large and varied collection of Polynesian paddles is to be found in the cases of the ethnological hall, displaying the diversity of form and peculiarity of ornamenta-tion characteristic of the productions of these people. The paddies, generally having spear-shaped blades, are finely finished and symmetrical in outline. The Sandwich Isl-ander, in common with all the paddies. ander, in common with all his Pacific ocean neighbors, was an expert swimmer.

The physique of the Polynesian excited the admiration of all the early voyagers. Having a skin of a distinctive brown hue, and certain marked features of character

FROM FAIR HAWAII characteristics shared with the aboriginal of the American continent. But whether this similarity indicates kinship or is but the result of like climatic causes is another An Interesting Collection at the Naattention to personal decoration, and fre-quent bathing in the brine of the ocean. The fatness which is characteristic of the Sandwich Island native is probably due to the richness of his diet. A kind of buck-wheat cake is made from the pulverized



Worth a Million

concentrated and very nutritious food. It is the staple article of diet in the islands. The taro flour is adapted better to the baking of cakes than bread. Large quantities of fish are also con-sumed, and the bread-fruit tree adds

further to the Polynesian's store of edibles.

Clothing of Paper. Paper was the material of which the Hawaiian made his clothing. He wore no woven fabrics, unless the feather war-cloak could be so called. This paper he manufactured much as the ancient Egytlan made papyrus. The mucilaginous inner they view the quaint, the curious and the In the art of making this raw material for his garments he was highly expert, and the truly artistic and widely diversified decora-However, the Hawaiians and their works of art are closely akin to the other memthese products of oceanic skill any study.

ern Pacific islands. A carefully constructed model of a Polynesian dwelling is to be seen among the objects classified as coming from the homes from the islands, which are now creating such intense interest among the people of these daring ocean roamers. The ground outline is oval, the roof, resting upon poles, which constitute the only resemblance to which Queen Kapioiani (the wife of King Kalakaua) presented to this government, the brilliant colored "war cloaks," so conspicuous in the ethnological court; several neatly rolled cylinders of braid, some good pholius process. Which constitute the only resemblance to a wall, is an approximately conical structure of palm leaf thatching. The thatching, as well as the wooden work of the house, is secured by cords. Beneath is a floor of small stones, covered with several layers of mats, and the whole house is built upon a terrace, two feet high, combuilt upon a terrace, two feet high, com-posed of loose stones, which secures drain-

age. Such furniture as the roof covers is made of the wood of the paim tree. The vessels were cut from gourds and blocks of wood. The collection which the museum possesses exhibits many peculiar kinds, varying in form from hollow hemispheres to flat boatshaped vessels.

A Decided Polytheist. emphatically a polytheist. His system of religion was very primitive. He had great gods and little gods, gods for the air, the ranged in places of all of the state of the sta Gods for everything made the Polynesian gods and little gods, gods for the air, the ranged in niches of all the rooms comprissun, the moon, the land, the sea and all things about him. Some of his clumsy of this class is one of chain and plate eximages were cut from stone and some from quisitely damascened and jeweled, worn by wood-two remarkable specimens of the former, from Easter Island, will be noticed by the visitor on his right, just after passing through the main entrance to the passing through the main entrance to the museum. The larger of these is eight feet high, with a broad, coarse face. Upon the head of the other—devoid of a body—rests a huge bandbox-shaped stone. The small wooden idols are ugly little things, for the art of the Pacific Islander runs to the grotage of these wooden images. tesque. Numbers of these wooden images are to be observed in the museum cases. are to be observed in the museum cases.

Taboo is a word which comes from the Polynesian languages, and expresses the characteristic idea of the Pacific Island religions—a feature which sets it apart as distinctive. Taboo is equivalent to the Latin "Noli me tangere"—touch me not.



Most gentle when not at war, the Polynesian was extremely cruel in battle, and a blood-thirsty ingenuity devised the most horrible weapons. The great array of these instruments of death, which are collected reigning Fing in the cases of the department of ethnology, sh the ancient are terribly suggestive of the tortures which have been inflicted upon enemies during centuries of habitual conflict. The highest skill of the savage was expended in their construction, and the detail of arrows, but his spears and clubs and tooth edged blades are perfect of their kind. The every knobbed sticks—always handsomely fin-ished—to broad biade-like weapons, whose flat parts were decorated with minute designs. The spears, some of them, nate figures, generally crescent shaped, of are fifteen feet long, and armed with horeither red or yellow feathers. The inner rible barbs, often consisting of several surface is without lining and shows the to the shaft. These teeth gave the cutting power to the natives' swords and daggers. To climax all, the Hawaiian was, as is well oo, or uho, and are of great value, as the To climax all, the Hawalian was, a bird is comparatively rare, very shy and known, a cannibal, and some one has protested against the annexation of the islands by declaring that the United States do not want to make part of their population a of bird lime, the yellow feather plucked and the bird released.

An issue of the Hawaiian Spectator in the islanders' idols are now consigned to 1829 contained this interesting information. 1839 contained this interesting information: museums, and his barbarous deeds to the

pages of history. Hope for the Future To the students of the past of this remarkable race it would seem that some bright future is yet in store for a people endowed with a daring, and possessed of an would equal that of the purest dia-astronomical science and a skill in navigation which made them in remote centuries the equals of the Norsemen or the fifteenth century Spaniards in feats of marine expioration. The Sandwich Islands are the most isolated bodies of land on the face of the earth, and for a long period its inhabi-tants enjoyed or suffered a seclusion from contact with other men. But this isolation consumed in the collection of the material of life did not always prevail, for during an for the manufacture of these mantles, which were, until recent years, the royal robes of all Polynesia some five or six centuries past, according to the oral records natives, the islands in the north and the numerous groups to the south enjoyed frequent intercourse. The distance "double" canoes of native construction. If these people could visit each other across

> paid as well to the American continent. Compensation.

"I should think bicycle riding would conand "sword" edges, the thatch, fatters and poles of houses, and even the water tight tract the chest," said Dawson.
"It does," said Smithers; "but see what fine, full, rounded shoulders you get!"



Great Centers.

TREASURES OF THE EAST AND THE WEST

Valuable Jewels and Books in Libraries and Cabinets.

MANY COSTLY CURIOS



O THOSE "WHO GO down to the sea in ships,"who roam over the world visiting odd nooks, rumgain or adventure, rare opportunities are enjoyed to add immensely to their fund of general information and to reinforce their fund of yarn-

bark of the mulberry tree was beaten until magnificent of foreign lands. Poor and init spread out in uniform sheets, several of significant indeed must be the country that which were then beaten together in such a does not possess more or less rare and beauinspection only to the favored few.

Various tours of duty in all portions of The museum contains a large collection of this printed paper from some of the southern Pacific islands.

the globe have enabled the writer at various the finest string of pearls in this country belongs to Mrs. Louis Hammersly, Mrs.

objects of interest that in many locations.

W. H. Vanderbilt wears a solitaire diamond. the globe have enabled the writer at various objects of interest that in many instances would baffle the pen of a Fabre or Verne to attempt a description.

> Take, for instance, the old seraglio at Constantinople, the sultan's art treasury. Probably few strongholds of the orient or the world can beast of such an accumulation. Who paid \$60,500 for it. It the world can boast of such an accumulation of wealth and grandeur.

A Throne of Beaten Gold.

In one room is deposited a great throne or divan of beaten gold set with pearls, or divan of beaten gold set with pearls, rubies and emeralds numbering many thousand. It belonged originally to Persia and was captured many years ago. Opposite to it stands a throne of Turkish workmanship many hundred years old, and many a sultan has sat cross legged upon its level. sultan has sat cross legged upon its jewelof the canopy is a golden rope on which world is declared to be a Hebrew Bible, now dangles an ornament in the shape of a ing the sevaglio. The most notable work Sultan Murad IV in 1638, at the capture of Bagdad. The hilt and scabbard of the scimiter are incrusted with diamonds, some of them exceeding half an inch in width. On one ebony bracket stood a massive tankard of gold. The handle, cover and a raised band around the center of the cup

then came enameled jewel-hilted daggers, sabers, scimiters, maces and battle axes. Vases filled with diamonds, rubies, emer-From this developed a worse ceremonial slavery than that in which any race of men ever became involved—worse by far than that under which the old Hebreus labored. The king's person was saved by far side with bales of brocades and velvets of a million dollars. One dish at the table of labored. The king's person was sacred—
at times everyone's person was sacred—
and not to be touched, and there were

elry of all descriptions mingled with heldrop worth \$50,000 dissolved it in attempt parently placed there with no regard to acid, drinking the health of the triumvir,

> The Standard of the Prophet. It is here also that the standard of the grand standard, the principal banner used by Mahomet in his wars, and figured notably on the occasion of his triumphal entry into Mecca. It is of such importance that a British ambassador at Constantinople used all his power on one occasion to prevail upon the sultan not to display the emblem of the prophet.

> The standard is a piece of dark camelot. some 12 feet long, and said to have formed part of the curtain which hung before the door of the room belonging to the prophet's favorite wife, Ayesha. With a view to its protection it is covered first with another flag, that of Omar, the second caliph, and taffeta, while over all these envelopes is a case of green cloth. To enhance the sacredness of the standard a copy of the Koran in the handwriting of Omar been placed within its wrappings, and likethe silver key of the Kaaba, which was presented by the Schrieff of Mecca to

> Selim I in 1517.
>
> The Sanjak-Schrieff was brought to Constantinople from Damascus in 1505, and was thence carried to the Turkish army engaged in a war against Hungary and Wallachia. Previous to that time it had been carried at the head of the annual pilgrimages to Mecca. It is, however, assumes the personal command of into battle. When a campaign is intrusted to ordinary officers the sacred banner is simply displayed in the capitol at the open-ing of the war. War under such a banner becomes war in the service of the faith, with visions of Mahomet, Omar, Osman, the Koran and Mecca. Its display is liable to excite and the excesses and fanatical enthusiasm common to men when they regard one another as the enemies of God. ed the sultan will be in desperate straits and thousands upon thousands of the faith-ful will rally under its folds ready to shed their last drop of blood in its defense.

Treasures of the Vatican.

The treasurers of the Vatican are beyond

There are four rooms specially decorated. in which are deposited scores of miters ornamented with precious stones; chalices in gold and silver; capes and garments for the highest church officials, and only donis 2,300 miles, yet the voyages were under-taken in nothing more pretentious than the of the robes are embroidered in gold, with construction. the arms of various popes emblazoned upon them. In the cabinets were once stored hundreds of precious objects, but when Plus VI was forced to pay a part of the 200,000,000 francs imposed by Napoleon I, the prelate had recourse to the chalices and golden vessels, which were melted down and placed side by side with numerous of the Vatican treasury in order to satisfy the demands of the rapacious con-When the French army occupied Rome in 1798, the treasury was sacked, and meny paintings and rare statuary carried ff. The tapestries, or arazzi, as the Remans call them, because they were made of the Vatican. The cartoons for the were made by Raphael, in 1515, and repre-sent various events in the life of the Savior. Some of these tapestries were carried off in 1798, and sold to a trader at Genoa, who burned one of them for the sake of the gold and silver threads used in the lights representing sunshine. speculation proving unprofitable, the trader, in 1808, disposed of the remainder to Pius who restored them to their original

> Under glass cases are many beautiful swords, which the popes are wont to be-stow upon those who win distinction fight-ing for the church. Here also are seen the "golden roses," given by the head of the church to ladies of royal blood who have istinguished themselves in the cause. The are made by a family living in the neigh-borhood, who have had a monopoly of the

question which is to be answered by nothing more than discordant speculation.

The women are pretty. They are conscious of this, and spend half their time in attention to the results of The ruby rests upon eleven large diamonds. which, in turn, are supported by a mat of pearls. The coronet of the empress is said to contain the most beautiful mass of diamonds ever collected in one band. The diamond in the extremity of the Rus sian imperial scepter, known as the Or-loff, weighs 194 3-4 karats, and cost 450,000 roubles. It came from the old mines of India, and once formed one of the eyes of the celebrated statue of Sherigan temple of Brahma. Its wonderful history would alone fill a volume. The traditional diamond of the east is the

Great Mogul. The original weight was 787 karats, and it disappeared in the last Tar tar invasion, when treasures to the amount of \$350,000,000 were captured by Nadir Shah. The Shah of Persia has in his treasur room jewels valued at \$40,000,000. His crow contains a mass of diamonds surmounted by a ruby as big as a hen's egg. His royal belt weighs twenty pounds, and is a solid mass of diamonds, rubies, and emeralds. When the shah was in Europe he wore a variety of diamonds and gems, the smallest maging the face of of which would have been a fortune to the the globe in quest of lucky possessor. The buttons of his coat were five in number, and each button was a diamond larger than the kohinoor. Some Expensive Luxuries.

The list of expensive luxurles in various parts of civilized Europe and America if grouped together in one catalogue would prove interesting for the curious to inspect. Mr. Marquand of New York has the costspinning material as lest piano of the world. Steinway made the works and the case, painted by Alma Tadema, was done in London, the whole costing \$46,000. He also owns the finest manner as to constitute a strong covering. Itiful material, popularly classed under the Mr. Mackey has the finest dinner service comprehensive head of treasure, all care-fully hoarded and guarded, usually open to his mines to the amount of \$75,000. After Tiffany's best artists got through with it. Mr. Mackey was called on to furnish check for \$195,000.

ring which cost \$48,000, and Mrs. Hicks Lord has a diamond necklace valued at \$250,000.

The most expensive picture in this coun-

has been estimated that this sum would more than cover the entire canvas with \$20 gold pieces. The most expensive book of its size in New York is the 1600 edition of Shakespeare's Sonnets, of which but two worth \$25,000, and nothing better has been in the Vatican. In the year 1512, it is said Pope Jules refused to sell it for its weight

The Shah of Persia smokes a pipe valued at \$400,000, and the late W. H. Vanderbilt owned a whip that cost over \$2,000. The design was made by Fritz Kaldenberg, the sculptor. The whip and ivory stock, before any carving was done, cost \$600. The braiding of the whip and the manufacture of the snapper occupied one entire month.

The costliest toy on record was a broken-nosed wooden horse, which belonged to Napoleon Bonaparte, and was sold for 1,000 francs. The largest price ever paid for a cane was \$90. It was once the property of George IV, made of ebony, with a gold top were covered with jewels of all colors and sizes, and in point of value must have been worth a king's ransom.

Scattered on all sides were splendid velvet saddle cloths embroidered with jewels;

George IV, made of coony, with a gold top containing the hair of the Princesses Augusta, Elizabeth, Mary, Sophia and Amelia, and inscribed, "The gift of the Princesses Augusta, Elizabeth, Mary, Sophia and Amelia, and inscribed, "The most expensive cigars in the world are made for the Prince of Wales in Havana, and cost \$1.87 apiece.

Some Costly Bananets. There are some costly banquets recorded in the world's history, and one supper, given drop worth \$50,000, dissolved it in strong saying, "My draught to Antony shall exceed in value the whole banquet." When Queen Elizabeth visited the exchange in Queen Victoria a dress made from spiders' webs. The web was made by the huge yellow spiders of Brazil, the fiber being large, of a bright orange color, silky, and possessing an exquisite luster. Its value or cost of manufacture is unknown, but it ranks as one of the curiosities of the world. The greatest sum ever paid for telegraph tolls in one week by a newspaper was in-curred by the London Times during the revolution in the Argentine Republic, and

the sum paid was \$30,000, or at the rate of \$1.75 per word.
No nation in the world expends so much in decorations in connection with banquets and balls as the Americans, and the figures cessary to secure flowers alone to add to the magnificence and success of a single night's entertainment would secure food.

raiment and fuel to twenty ordinary families for a winter's season.

What the Expert Said. From the Jewelers' Review.

A little incident happened in London recently. A foreign gentleman presented himself at the office of one of the largest firms in the diamond trade, and solicited an offer for a crystal of exceptionally fine shape, luster and color, that he had just brought straight from the South African diamond mines. But its perfection sorely tried the appraising capabilities of the army that the Sanjak-Schrieff is borne firm, who, after two hours' deliberation and testing it in all the ways known to them, ultimately took the specific gravity of it, which confirmed the opinion that it was a diamond. However, there was something that caused some little doubt to arise, and the firm forthwith sent the owner with his treasure to an expert, a mineralogist, to ascertain its adamantine nature. But the scientist was a man of common sense, and in reply as to whether it was a diamond immediatedemanded whence it came, and from what mine. The former question readily answered, but when particulars were pushed a little closer it became evi-dent that it was more than possible that all price or calculation, and but few fav-ored mortals cutside of the church have being made, its owner affirmed that this big firm had tried everything they knew, and been two hours in doing so, and were then left in doubt. "Well," said the expert, "let us try the most simple test first. May I test its hardness?" and leave having been obtained, he took out a file and made a small gutter down it like that in the so-called Mattam diamond." "Do you mean to tell me," said the mineralogist, "that that represents the amount of knowledge in the diamond trade? that one of its largest firms don't know a diamond from a bit of glass! Or that you have got hold of it without knowing the difference--well-there's something wrong some where!"

A Remarkable Long-Lived Family.

From the London Times, Canon Roswell, who died this week at the advanced age of seventy-eight, came of a long-lived family. Mr. Roswell's father married at the age of nineteen, his wife being twenty. They had nineteen children. of whom five died in infancy. The remaining fourteen attained or have attained (three are still living) the following ages: Seventy-nine, seventy-eight eighty-two, sixty-seven, eighty, seventy-one, eighty-nine (still living), eighty-three, eighty-one, seventy-seven, thirtyeight, seventy-nine (still living), seventy eight and seventy-five (still living). What is perhaps as remarkable is the length of days reached by the respective husbands teen who entered the married state. are the ages: Seventy-four, forty-five, sixty-five, seventy-nine, eighty-seven (still living), eighty-five, eighty, eighty-four (still enty-seven, fifty-seven, seventythree and eighty-seven.

"It's All Ont."

They had been out yachting, when a manufacture over three hundred years. The roses are exquisitely wrought, inlaid with diamonds and rubies, representing a doubtful whether they would continue value of over \$5,000. Having a skin of a distinctive brown hue, and certain marked features of character and temperament, his is a race to be set apart from all others upon the earth. What land was his previous home is a question which ethnological research and debate have not yet answered. He has none of kin have not yet answered. He has none of win any other countries than the islands of in any other Pacific, though in some respects he has the Pacific though in some respects he has the previous home is a question through there are the fine titans is one presented by the did they were landed to the safety and every the details the powerful muscle by without fearth the powerful muscle by without

dustry in Maryland.

IT IS NOT YET TOO LATE TO ACT

How the Yearly Crop May Be Multiplied Many Fold.

PERISHING BIVALVES some of them encounter the germinal cells thrown out by the males, are thus fertilized, and so develop.



OME FACTS ABOUT the Maryland oyster fishery and the dangers now threatening the other day. Per-Brooks of Johns Hopkins Universityhave declared it

practicable to restore the industry and even to make it vastly more profitable than

oysters. This has been merely a wild crop furnished by nature, without any aid from lation of Maryland. man. It compares with what might be obtained from the same waters in about the same way that nuts and berries which are

oysters ever used by the packers of that state and Virginia.

The time will surely come when the harvest of each year will be fully equal to the total harvest of the last fifty years, and will be obtained without depleting the beds. To bring the whole of the bay under thorough cultivation will require many years, and will cost a great sum of money; but the expense and labor involved will be much less than are required in raising crops on an equal area of land above water.

to attach themselves and to become sedentary.

The next difficulty encountered by the young oysters is that of finding some solid body on which to establish themselves. If they fall upon the soft bottom they are buried and smothered in the mud. Only a very small percentage of those which survive thus far are able to secure places of residence adapted to their way of living. They attach themselves to shells, rocks,

Chesapeake bay is one of the richest agricultural regions of the earth. The fertility of its bottom can be compared only with that of the valleys of the Nile and the Ganges and other great rivers. But it is adapted for producing only one grap-the oyster. This mollusk, it must be remembered, lives on vegetable food, as do all animals directly or indirectly. If there were no plants, all animals would starve at

All human food is vegetable in its origin, whether eaten in the shape of plants or as beef, mutton and eggs. In the sea the bluefish preys on smaller fishes; many of these on smaller ones; these, in turn, upon minute crustaceans; these on still smaller creatures; and these last pasture on the microscopic plants which swarm at the surface of the ocean. All animals on land and water depend for their existence on vegetable

Food for Ocean Life.

To the superficial observer the vegetation f the sea appears to be ve except for the fringe of sea weeds along the shore, the ocean seems, so far as plant life is concerned, to be a barren desert. But the microscope shows that the surface It is here also that the standard of the prophet is kept in times of peace, the sacred and far-famed Sanjak-Schrieff or In 1877 the Empress of Brazil presented to of the land except the power to change mineral matter into food that is fit for animais.

> invisible to the unaided eye, and, even when they are gathered together in a mass, it looks like slimy, discolored water. They seem too insignificant to play any import ant part in the economy of nature, but the great monsters of the deep, beside which the elephant and the ox and the elk are small animals, owe their existence to these microscopic plants. Their vegetative power s wonderful past all expression. Among land plants corn, which yields seed about a hundreifold in a single season, is the em blem of fertility, but it can be shown that a single marine plant very much smaller than a grain of mustard seed would fill the whole solld in less than a week, if all of its descendants were to live.

As countless minute animals are constant. ly pasturing upon them the multiplication of these plants is kept in check, but in calm weather it is no rare thing to find great tracts of water many miles in extent nacked so full of them that the whole sur face is converted into a slimy mass, which breaks the waves and smooths the surface like oil. The so-called "black water" of the Arctic and Antartic oceans consists of a

mass of these plants crowded together until the seas are discolored by them. Through these seas of "black water" roam the right whales, the largest animals on earth, gulping at each mouthful hundreds of gallons of the little mollusks and crusta ceans which feed on the plants. In tropical sens ships sometimes sail for days through great floating islands of this surface vege ation, and the Red sea owes its name to the coloration of its water by swarms of microscopic plants which are of a reddish tinge. It has been surmised that man may at some future time assert his dominiover the fishes of the sea, sending out flocks and herds of domesticated marine animals to pasture and fatten upon the vegetable life of the ocean and to make its vast wealth of food available.

Chesapeake bay receives the drainage of more than 40,000,000 acres of fertile land the most valuable part of the soil from which is received eventually in the bosom of its quiet waters. There it is deposited all over the bottom in the form of fine sediment, known as oyster mud. This is just as valuable to man and as fit to nourish plants as the mud which settles every year on the wheat fields and rice fields of Egypt. It is a natural fertilizer and it in a few hours when exposed to the sun. A Luxuriant Vegetation.

In the shallow waters of the bay, under the influence of warm sunlight, this mud produces a most luxuriant vegetation, but with few exceptions the plants which grow from it are microscopic and invisible. They are not confined like land plants to the surface of the soil, their food being diffused in solution through the whole body of the water. As they are bathed on all sides by nourishment, they do not have to go destruction, is less than 3 per cent of their through the slow process of sucking it up through roots and stems, and they grow and multiply at a rate which has no parallel

ed for living in such waters and for gather-ing up these microscopic plants and turning them into food for man. Microscopic animals also contribute to its diet. These are rather abundant in all water, though not so much so as most people imagine. When a professional exhibitor shows you, under the microscope, what he calls a drop of pure water, it is nothing of the sort. It is either a collection made by filtering several barrels of water, or else it is a drop squeezed from a place of decayed moss or from some from a piece of decayed moss or fro other substance in which such small organ-isms have lived and multiplied.

The oyster, by the way, is a far more complicated animal than is popularly imagined. It has a heart which pumps blood through the vessels of its body, also a liver, gills for breathing, an intestinal canal, a stomach and a system of nerves enter which is to all intents and purposes brain. The ends of the nerves are provided with sense organs, which serve vided with sense organs, which serve to put the creature into communication with the external world. What is commonly called the "heart" is the powerful muscle by means of which the animal keeps hold of

WORLD'S RARITIES

vate apartments, and are never exhibited to the most favored guest or visitor.

The Finest Crown of Europe.

The finest crown of Europe is that worn by the Czar of Russia. It is surmounted by a cross formed of five magnificent diamonds, resting upon an immense ruby.

The Rich Things Hoarded at the most favored guest or visitor.

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The Rich Things Hoarded at the most favored guest or visitor.

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The Finest Crown of Europe is that worn by the Czar of Russia. It is surmounted by a cross formed of five magnificent diamonds, resting upon an immense ruby. for some days after coming into the world is a free-swimming animal. It is only after seeing somewhat of such active life that it is content to settle down and become a fixture for the rest of its natural existence. fixture for the rest of its natural existence. It used to be supposed that there was no distinction of sex among oysters—in fact, that they were hermaphrodite. This notion has been exploded. There are males and females, and each one of the latter when adult lays about 16,000,000 eggs in a season. These are not cared for by the methys are These are not cared for by the mother, as is the case for a time with a European species of oyster, but are simply thrown did that the water to shift for themselves. Nearly all of them are lost and perish, but some of them are counter the garminal cells.

> Enormous Rate of Increase. If all the eggs were to be fertilized, and were to live and to grow to maturity, they would fill up the entire bay in a single season. Indeed, this statement is much short of the truth. It has been calculated that to destroy it were the descendants of a single female in five printed in The Star generations would number 66,000,000,000,-000,000,000,000,000,000,000,000. These oysters chance it will not be would make more than eight worlds, even uninteresting to dis- if each female laid only one brood of eggs. cuss the methods by As the oyster lives for many years, and lays eggs each season, the conceivable rate of increase is very much greater than that shown by the figures.

The waste of oyster eggs through lack of fertilization is enormous, but it is possible to fertilize them artificially by mixing the eggs and the male cells in a small quancome into contact with each other. In this it has ever been hitherto. The key of the problem is oyster culture.

During the last fifty-six years, since the establishment of packing houses, the Chestablishment has a produced house house house house has been contact with the contact with the packing houses, the Chestablishment has been contact with the contact house house has been contact with the packing houses, the chestablishment has been contact with the packing houses, the chestablishment has been contact with the packing house has been contact wit number of active and healthy oysters greater many times than the whole human popu-

Having become fertilized by meeting with male cells, the next period of great danger ject, namely, trades, real estate, land, and to the oysters is the short time during those having an income above a certain same way that nuts and berries which arc gathered in forests and swamps compare with the harvest from cultivated fields and orchards.

The opportunities for rearing cysters by artifice in the Chesapeake are unparalleled in any other part of the world. In foreign countries grounds of much less value have, countries grounds of much less value have, by cultivation, been made to yield the bivalves at a rate per acre which, on the beds of Maryland, would carry the annual accidents and enemies are greatly diminished. Up to this point there is no difficulty harvest far beyond the sum total of all the ed. Up to this point there is no difficulty in rearing them in an aquarium. Possibly some such method will eventually be applied to propagating cysters, with a view to planting them as soon as they are ready vest of each year will be fully equal to the to attach themselves and to become seden-

> They attach themselves to shells, rocks, floating bushes or whatever may promise a secure lodgement. Where the bottom is soft in the Chesapeake there are no ovs-ters. The so-called "rocks" on which they dwell in those waters are not ledges nor reefs, but accumulations of oyster shells. Planting Oyster Shells. Accordingly, it appears that great help

may be afforded to the oyster-producing industry by scattering shells upon the bottom, thus affording a beginning for new beds. This has already been practiced to fixed by a committee of the trad a large extent in Connecticut. Shell planting should not be attempted until the spawning season has arrived, which is the in London is not quickly examined nor month of June in Maryland, because shells easily described. English local governthat have been laid down for a few days | ment can only be called a system on the become so silmy that the emoryos are un- lucus a non lucendo principle. "There is able to attach themselves. From 1,000 to 1,200 bushels per acre should be employed. The process might be compared to stattering corn cobs over dry land, with the expectation of picking up ripe ears in full grain at a later period. The number of overters which attach themselves to the cysters which attach themselves to the shells thus laid down is commonly so great properly develop. This is avoided by taking them up with dredges when the new bed is two years old and knocking the shells to pieces, which are either sold as sewers and drains, sanitary works, etc. "seed," to be planted elsewhere, or are redistributed over a greater area of bettom, in order that they may have plenty of space to grow in. Scollop shells or mussel shells are even better for the purpose when they can be procured in sufficient quantity, because they are so fragile that the strain of the growth of two or more oysters attached to a single mussel or scollop vaive will often crack it into pieces. permitting the several inch to separate and grow into good shape singly

very great return for the capital and labor yed. In course of time even the soft, bottoms of the deepest channels may be transformed into beds. It is doubtfal whether there is any farming land in the United States which yields so great a profit to the acre as the bottoms used for oyster planting in Rhode Island. If all the area of Maryland proper for this pur-pose were utilized in the same way it would, if no more profitable than the cys-ter grounds of Rhode Island, bring the vast sum of two thousand million dollars into the hands of the planters each year. Oysters used to be very plentiful along the New England coast north of Cape Cod. They were exterminated by reckless fishing many years ago. The plous oystermen of Wellfleet, on Cape Cod, after they had wiped out their oysters by overfishing laid the loss upon Providence, which had, they said, punished them for their sins by in-

bivalves.

ture in Maryland is the lack of protection for planted oysters. No law gives any rights to the owner in a bed which he has 306,000 bushels of fine oysters on about seventy acres of bottom. They were all taken by tongmen and dredgers. According to the theory now held, the oyster beds are their nature and which the property of the state, and no one person The oyster fisheries of Maryland now afford precarious employment for a few A curious fancy in bric-a-brac has furnished to the foundation of a modern men. They ought to give profitable work to 503,000. They have paid to oystermen about \$2,000,000 annually; they ought to pay to cultivators \$60,000,000 a year. Only a very small part of the bottom which is proper for cyster farming is now occupied by natural beds, and it is safe to estimate keepers were his principal customers, but by natural beds, and it is safe to estimate the total area of valuable oyster-producing ground in the state at 1,000 square miles, or \$40,000 acres. Much of this area could be made to yield an annual profit of \$1,000 per acre, and the profit on the whole, under a thorough system of cultivation, would not be less than \$100 per acre. It is reckoned that, when the whole of this area shall have been developed, the future citizens of Maryland will be able to draw an annual income of over \$60,000,000 from the waters of Chesapeake bay. The actual annual value of the oyster beds, under a system which is rapidly leading to their complete cossible value.

The cyster is as fixed and sedentary as

a potato, and its cultivation is as simple as any other branch of agriculture. One in the land plants. In fact, they would quickly choke up the whole bay if they were not held in check by countless minute animals which feast upon them.

The oyster is an animal especially adaptter. One great advantage of Chesapeake bay is that its waters are too fresh for star fishes. In Long Island sound these enemies often come up in great armies to the beds, destroying whole farms and leaving behind them empty shells

them empty shells.

The fact is that the demand for Chesa peake oysters has outgrown the natural supply. While legislation must interfere supply. While legislation must interfere for the protection of those which remain, scientific methods must be adopted for increasing the yield. As has been said, the latter may be augmented almost indefinitely. There are a number of plans, tried with success abroad, which might be pursued to advantage here. Among these is sued to advantage here. Among these is the collection of "spat" by means of such devices as tiles and bundles of twigs. At all events, it may be predicted safely that before many years the oyster fishery in Chesspeake bay will have undergone a complete revolution through the adoption of civilized, in place of what might be termed savage, methods of conducting the industry.

From Hallo.

ASSESSMENTS IN EUROPE

How Taxes Are Apportioned in London, Paris and Berlin.

Rental Values Generally Recognized as the Basis of Taxation-

Written for The Evening Star.

In a previous article I wrote about the relations of the municipality to the general government in the principal European states. In my investigation I found much that I thought would interest the people of Washington. It would not be inopportune to give the result of an examination of the methods pursued in Europe in the matter of assessments and taxes.

Special City Taxes.

There is but one system of assessment in Europe, namely, the rental system, based on the idea that property is worth only what it will produce under fair conditions and that people do not invest their money willfully in unproductive property or property that will not pay a fair return on the investment. People who buy land unimproved gain by its growth. Property that cannot be rented for enough to pay taxes and leave some margin for the owner must be reduced in the assessment until a point is reached where it will pay something to the state and the owner, too. This is considered fair to all parties concerned. There are various tity of water, where they are certain to come into contact with each other. In this out all the states of Europe it is the only one recognized.

> The Berlin Methods. In Berlin the assessment is made by board of assessors drawn from the several

> classes subject to taxation, and the law

requires that each class be represented in

the board. Now there are four classes sub-

those having an income above a certain amount. The classification and assessing is done by this board upon information and evidence or examination. The parties assessed may appeal to a central commission, whose decision in the matter is final. In the absence of authentic proof to establish the amount of annual income, the style of living and annual expenditure is accepted as sufficient proof of a corresponding in-come. In assessing real estate the purpose come. In assessing real estate the purpose for which it is used makes considerable difference as to the amount the owner pays. All houses used for business purposes pay less than the same would pay if used as a dwelling. This is done to stimulate trade, and it is no uncommon thing to see some of the finest houses fixed up as stores, and in the best parts of the city. One of the strange things in the matter of assessment is the trade tax, a state tax. This is levied on commerce, hotels, restaurants, mill industries, freight establish ments, manufactories, livery stables, peddiers, &c. In order to estimate the amount of the trade tax to be levied it is customary to suppose a medium tax. Thus, if there are eighty trade taxpayers in one class at a given place, and the medium from the total of such tax is found to be 30 months. marks, the amount of the tax will be for the next fiscal year 30x80-2 400 marks for the class of traders concerned. In case one is not able to pay the lowest amountmarks—a lower rate is granted him, and the difference must be made up by those remaining of the eighty; 2,490 marks must be paid, no matter what percentage any in-dividual will be called upon to pay. The amount of the individual tax is generally

In London. The question of assessment and taxation neither co-ordination nor subordination," as Mr. Chalmers says, among the numerous ration and a commission called the comm the police, the city markets, courts of ju-tice, bridges and education. The latter, streimprovements, paving, lighting, cleanir sewers and drains, sanitary works, e cient and hospitable corporation, with large revenues from estates, toils special privileges, is quite small, cor ing only 700 acres of ground and 52,00 residents. The metropolitan district, of Greater London, as it is called, extends into four counties, embracing 120 square miles, with a population of more than 5,000,000 with 490,000 houses and a ratable value for taxation of \$137,700,145.

The city proper enjoys some special and peculiar rights of taxation. It taxes all bay that might not be converted into an oyster bed by this simple methol of cultivation, which has been shown to yield a very great return for the convict of the convict o per ton or wine coming into the London as merchandise. It also small tax on all grain imported into the port of London at the rate of 3-16 of a penny per hundredweight. These are spe-

cial privileges that belong to the city. In Paris.

France offers the best example of paternalism in government to be found anyit where, Russia not excepted. In no other place in Europe is the science of taxation so fully developed or its ramifications so extensive. Everything and everybody to taxed, but it is so scientifically done that the people do not feel it, nor do they complain. The Octroi reaches everything and everybody. There is a cordon around Paris very much like the sentinels around a mil-itary camp. They number 3,000 men, and collect toll on everybody and everything said, punished them for their sins by inflicting a fatal disease upon the innocent
bivalves.

The Need of Protection.

The most serious obstacle to oyster cul
The most serious obstacle to oyster culestate tax. In fact, it is too small to be taken into account. It consists of a small tax levied for the use of the sewers. The rights to the owner in a bed which he has city carries on several businesses in its created. In one instance a farmer raised own name or farms out its right to others The pawnbroking business is carried on by the authorities. The undertakers' trade be the authorities. The undertakers trade be-longs to the city, and in various ways the city monopolizes those trades general in their nature and which yield a large rev-erue.

DANIEL MURRAY

nished one man the foundation of a mode ate fortune within the last year. He has a store on State street, near 14th, and used to limit his transactions to the purchase now one may see fashionable carriages at the door on almost any bright day, and he will tell you that the wealthy and people whose tastes run to odd ornaments are regular visitors there. They buy odds shaped bottles and jugs of all sorts and pay shaped bottles and jugs of all sorts and pay handsomely for such treasures as old Dutch wares in blue or the quaint decorated bot-tles in which various liquors and mixtures are imported. Glazed jugs of fine finish and drinking mugs such as the German's showed at Jackson Park last summer have become almost a craze, and bring three of four times their former value.

Mr. Snorkins is bothered by Florida